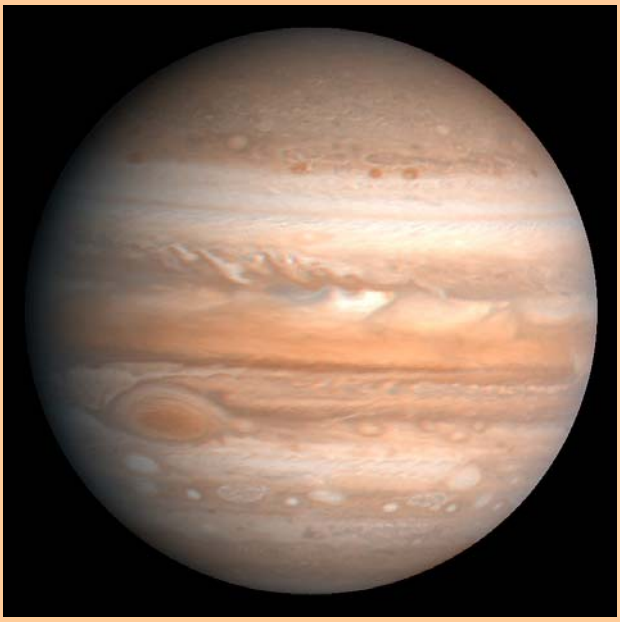
USGS
science for a changing world

http://astrogeology.usgs.gov

Jupiter

Fifth planet from the Sun



USGS/NASA PIA00343

Orbit
5.20 astronomical units (AU) from the Sun
Earth is 1 AU from the Sun

Length of year
11.9 Earth years

Length of Day
9.9 Earth hours

Tilt of Rotation Axis
3.1 degrees versus 23.5 degrees for Earth

Size
Diameter: 11.0 times the diameter of Earth

Surface Gravity
2.36 times greater than Earth's gravity
If you weigh 80 pounds on Earth, you would weigh about 203 pounds on Jupiter!

Mass
Jupiter is more than twice as massive as all of the other planets combined; it is 318 times as massive as Earth.

Atmosphere
Jupiter is about 90% hydrogen and 10% helium, with traces of methane, water, ammonia and "rock." This is very close to the composition of the primordial solar nebula from which the entire solar system was formed. Saturn has a similar composition, but Uranus and Neptune have much less hydrogen and helium.

Surface
The gas planets do not have solid surfaces; their gaseous material simply gets denser with depth. What we see when looking at these planets are the tops of clouds high in their atmospheres.

Moons
As of February, 2004, Jupiter has 63 known satellites: the four large Galilean moons, 34 smaller named moons, plus many more small moons discovered recently and not yet named.

Past Missions
Jupiter was first visited by Pioneer 10 in 1973 and later by Pioneer 11, Voyager 1, Voyager 2, Ulysses, and Cassini-Huygens. The spacecraft Galileo orbited Jupiter for eight years. Jupiter is still regularly observed by the Hubble Space Telescope.

The largest and most massive of the planets was named Zeus by the Greeks and Jupiter by the Romans; this was the most important deity in both mythologies. Some satellites in the Jovian system are named for Zeus/Jupiter's lovers and descendants.

Beneath thousands of miles of hydrogen, helium, methane, and ammonia, Jupiter's solid core is probably 10 to 20 times as massive as Earth.

Jupiter is visible to the naked eye without the aid of a telescope. Its motion against the field of background stars shows it to be a planet. The word "planet" is derived from a Greek word for "wanderer."